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EXAMINER
VO, NGUYEN THANH

ART UNIT	PAPER NUMBER
2685	

DATE MAILED: 08/19/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/581,457	REYNOLDS ET AL.	
	Examiner	Art Unit	
	Nguyen T Vo	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *06 June 2003* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 06/06/2003 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 33, 36 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Luijten (WO 95/17076).

As to claim 33, Luijten discloses a cellular communication system comprising a plurality of base stations (1, 3) adapted to conducting communications with mobile stations 2 via a radio interface, and a service node 4 adapted to receive radio resource signalling reports generated by mobile stations when in connected mode in the system, the system being arranged to route the reports from the plurality of base stations to the service node (see page 19 line 14 to page 20 line 20), wherein the radio resource signalling reports are intended for use by a service node to allocate a radio resource to the mobile station (see page 3 lines 15-24; page 19 line 14 to page 20 line 20).

As to claim 36, Luijten discloses that the service node is adapted to select radio access nodes to be allocated to the mobile stations on the basis of the reports (see page 19 line 14 to page 20 line 20).

As to claim 38, Luijten discloses that the base stations are adapted to select radio resources to be allocated to the mobile stations on the basis of radio measurement reports received from the mobile stations (see page 19 line 14 to page 20 line 20).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ekman (5,960,355) in view of Doner (5,657,487).

As to claim 30, Ekman discloses a method of transmitting radio resource signalling reports from a mobile station in a cellular communications system, comprising: transmitting the reports in the form of mobile-originating SMS messages (see column 6 lines 47-65). Ekman, however, fails to disclose that the radio resource signalling report are intended for use by a service node to allocate a radio resource to the mobile station as claimed. Doner discloses a mobile communication system, wherein a mobile station transmits a radio resource signalling report which is intended for use by a service node to allocate a radio resource to the mobile station (see column 4 lines 16-51). Doner also discloses that the signalling report is also used for determining the location of the mobile station (see column 6 lines 18-30). *Since the signalling report is also used for determining the location of the mobile station in Ekman*, it is apparent that the teaching of Doner could be properly used in Ekman so that the signalling report transmitted from the mobile station could be used for two purposes: handoff and determining the mobile station location. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Doner to Ekman, so that the signalling report from the mobile station could be used for two purposes: handoff and determining the mobile station location (as suggested by Doner at the abstract, column 6 lines 18-30).

As to claim 31, Ekman discloses a method of transmitting signalling reports from a mobile station MS1 to a cellular communications system comprising a plurality of base stations (BS1-BS3) including a base station serving the mobile station via a radio link, the method comprising: encapsulating a radio resource signalling report before

transmission over the radio link, such as to prevent the serving base station from intercepting the radio resource signalling report (see column 6 lines 47-65. In this case, since the signalling report is encapsulated in SMS message, it would prevent the serving base station from intercepting the radio resource signalling report as admitted by applicant on page 7 lines 19-22 of the present specification). Ekman, however, fails to disclose that the radio resource signalling report are intended for use by a service node to allocate a radio resource to the mobile station as claimed. Doner discloses a mobile communication system, wherein a mobile station transmits a radio resource signalling report which is intended for use by a service node to allocate a radio resource to the mobile station (see column 4 lines 16-51). Doner also discloses that the signalling report is also used for determining the location of the mobile station (see column 6 lines 18-30). *Since the signalling report is also used for determining the location of the mobile station in Ekman*, it is apparent that the teaching of Doner could be properly used in Ekman so that the signalling report transmitted from the mobile station could be used for two purposes: handoff and determining the mobile station location. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Doner to Ekman, so that the signalling report from the mobile station could be used for two purposes: handoff and determining the mobile station location (as suggested by Doner at the abstract, column 6 lines 18-30).

7. Claims 21, 23, 32 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luijten (WO 95/17076, submitted by applicant) in view of Schmidt (5,682,416, submitted by the examiner).

Regarding claim 21, Luijten discloses a method of transmitting signalling reports from a mobile station 2 to a serving base station 1 in a cellular communications system comprising a network infrastructure (see numeral 4) and a plurality of base stations (see base station 3) connected thereto, the method comprising the mobile station 2 transmitting a radio resource signalling report (see the first adjustment message on page 19 lines 14-22) intended for use by the serving base station 1 to allocate a radio resource to the mobile station, and transmitting a radio resource signalling report (see the second adjustment message on page 19 lines 14-22) intended for use by the service node 4 to allocate a radio resource to the mobile station (see page 3 lines 1-24, page 9 lines 20-27, page 12 lines 17-24, page 19 line 14 to page 20 line 20). Luijten thus discloses all the claimed limitations except for transmitting radio measurement reports intended for use by the serving base station 1 as recited in the claim. Schmidt discloses a method of transmitting signalling reports from a mobile station (see MU 80 in figure 3A) to a serving base station (see BTS 21 in figure 3A) in a cellular communications system comprising a network infrastructure (see numerals 50, 60, 70) and a plurality of base stations (see BTS 22-24 in figure 3A) connected thereto, the method comprising transmitting radio measurement reports intended for use by the serving base station to allocate a radio resource to the mobile station (see column 3 lines 52-67). Therefore, it would have been obvious to one of ordinary skill in the art at

the time of the invention to provide the above teaching of Schmidt to Luijten, because by reporting signal measurement from the mobile station to the base station, the handoff procedure would be greatly improved.

As to claim 23, since the mobile station reports signal measurement to the serving base station as disclosed at column 3 lines 64-67, it would be inherent that the mobile station transmits the radio resource signalling report occurs during a dedicated channel traffic connection for the mobile station.

Regarding claim 32, it is rejected for the same reasons as set forth in claim 21 above.

As to claim 42, the above combination of Luijten and Schmidt discloses the claimed limitation (see Schmidt, column 3 lines 61-67).

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Luijten and Schmidt as applied to claim 21 above, and further in view of Ekman (5,960,355, submitted by the examiner).

As to claim 22, the combination of Luijten and Schmidt fails to disclose encapsulating the radio resource signalling reports in the form of a mobile-originating SMS message as recited in the claim. Ekman discloses encapsulating the radio resource signalling reports in the form of a mobile-originating SMS message (see column 6 lines 47-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Ekman to the above combination, in order to reduce the traffic load in the system (because the radio

resource signalling reports are now encapsulated in the form of a mobile-originating SMS message).

9. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luijten and Schmidt as applied to claim 21 above, and further in view of the prior art of figure 1 as admitted by applicant on page 4 line 13 to page 7 line 22 of the present specification.

As to claims 24-25, the above combination of Luijten and Schmidt does disclose that the radio resource signalling report comprises signal strength data measured for neighboring cell base station (see Schmidt, column 3 lines 61-66). The above combination, however, fails to disclose that the radio resource signalling report comprises downlink quality data measured for the serving base station, and that the radio resource signalling report comprises signal strength data measured for neighboring cell base stations. The admitted prior art disclose that the radio resource signalling report comprises downlink quality data measured for the serving base station, and that the radio resource signalling report comprises signal strength data measured for neighboring cell base stations (see the present specification, page 7 lines 3-5). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of the admitted prior art to the above combination, in order to improve the handoff procedure by selecting a base station with the best measured signal strength.

10. Claims 26-27, 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luijten and Schmidt as applied to claim 21 above, and further in view of Mayrand (5,504,939, submitted by the examiner).

As to claims 26-27, 43-44, the above combination of Luijten and Schmidt fails to disclose the radio resource signalling data comprises data specifying the current requirements of the mobile station comprises at least one of bandwidth signal-to-noise ratio, radio path loss, cost and quality of service requirements. Mayrand discloses the radio resource signalling data comprises data specifying the current requirements of the mobile station comprises at least one of bandwidth signal-to-noise ratio, radio path loss, cost and quality of service requirements (see column 6 line 21 to column 7 line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Mayrand to the above combination, in order to optimize the service provided to a subscriber within the system (as suggested by Mayrand at column 2 lines 16-23).

11. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luijten and Schmidt as applied to claim 21 above, and further in view of Andersson (5,594,949, submitted by the examiner).

As to claims 28-29, the above combination of Luijten and Schmidt fails to disclose that the transmitting the radio resource signalling report occurs in response to a request from the cellular communications system, or that the transmitting the radio resource signalling report occurs in response to a request from the user as recited in the claims. Andersson discloses that the transmitting the radio resource signalling report

occurs in response to a request from the cellular communications system (see column 6 lines 15-25, lines 51-61), or that the transmitting the radio resource signalling report occurs in response to a request from the user (see column 6 line 62 to column 7 line 7. In this case, since the mobile station transmits signal report when it makes origination access, the mobile station transmits the radio resource signalling report occurs in response to a request from the user). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Andersson to the above combination, in order to report the signal measurement as wanted by the system or the user (as suggested by Andersson).

12. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Luijten in view of the prior art of figure 1 as admitted by applicant on page 4 line 13 to page 7 line 22 of the present specification.

As to claim 34, Luijten fails to disclose that the radio resource signalling report comprises at least one of downlink quality data measured by the mobile stations and neighbor cell signal strength data measured by the mobile stations. The admitted prior art disclose that the radio resource signalling report comprises downlink quality data measured for the serving base station, and that the radio resource signalling report comprises signal strength data measured for neighboring cell base stations (see the present specification, page 7 lines 3-5). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of the admitted prior art to Luijten, in order to improve the handoff procedure by selecting a base station with the best measured signal strength.

13. Claims 35, 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luijten in view of Mayrand (5,504,939, submitted by the examiner).

As to claims 35, 41, Luijten fails to disclose that the radio resource signalling reports comprise data specifying bandwidth and at least one of cost and quality of service requirements for the mobile stations. Mayrand discloses that the radio resource signalling reports comprise data specifying bandwidth and at least one of cost and quality of service requirements for the mobile stations (see column 6 line 21 to column 7 line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Mayrand to Luijten, in order to optimize the service provided to a subscriber within the system (as suggested by Mayrand at column 2 lines 16-23).

14. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Luijten in view of Mayrand.

As to claim 37, Luijten fails to disclose that the radio resource signalling reports comprise data specifying bandwidth and at least one of cost and quality of service requirements for the mobile stations. Luijten discloses that the radio resource signalling reports comprise data specifying bandwidth and at least one of cost and quality of service requirements for the mobile stations (see column 6 line 21 to column 7 line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Mayrand to Luijten, in order to optimize the service provided to a subscriber within the system (as suggested by Mayrand at column 2 lines 16-23).

15. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Luijten in view of Barnett (5,428,816).

As to claim 39, Luijten fails to disclose that the system is adapted to transmit a request for the one of the reports to one of the mobile stations in response to a change in the service conditions for the one mobile station. Barnett discloses that the system is adapted to transmit a request for the one of the reports to one of the mobile stations in response to a change in the service conditions for the one mobile station (see column 1 lines 39-49. In this case, a change in the service conditions for the one mobile station as claimed reads on a certain drop in the signal level of the mobile station). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Barnett to Luijten, in order to reduce the traffic load from the mobile station because the mobile station only reports the signal measurement when there is a certain drop in the signal level of the mobile station.

16. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Luijten in view of Ekman (5,960,355, submitted by the examiner).

As to claim 40, Luijten fails to disclose means for extracting the radio resource signalling reports from SMS messages received from the mobile stations as recited in the claim. Ekman discloses encapsulating the radio resource signalling reports in the form of a mobile-originating SMS message (see column 6 lines 47-65). Since the radio resource signalling reports is encapsulated in the form of a mobile-originating SMS message, it would inherently Ekman discloses means for extracting the radio resource signalling reports from SMS messages received from the mobile stations. Therefore, it

would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Ekman to the above combination, in order to reduce the traffic load in the system (because the radio resource signalling reports are now encapsulated in the form of a mobile-originating SMS message).

Response to Arguments

17. Applicant's arguments with respect to claims 21-44 have been considered but are moot in view of the new ground(s) of rejection.

Discussion of Rejection of Claims 30-31 Under 35 USC 102(e):

Regarding the amended claims 30-31, applicant's attention is directed to the rejection to claims 30-31 above as to why the newly-added claimed limitations are not patentable over the applied references.

Discussion of Rejection of Claims 33, 36 and 38 Under 35 USC 102(b):

Regarding the amended claims 33, 36 and 38, applicant's attention is directed to the rejection to claims 33, 36, 38 above as to why the newly-added claimed limitations are not patentable over the applied references.

Discussion of Rejection Under 35 USC 103(a):

Regarding claim 21, applicant argues that is unclear why the examiner first states that Luijten discloses a method comprising a mobile station 2 transmitting a radio resource signalling report intended for use by the serving base station 1 to allocate a radio resource to the mobile station, and then later states that Luijten discloses all the claimed limitations except for transmitting radio measurement reports intended for use by the serving base station 1. The examiner, however, believes that his statements are

clear. In this case, Luijten discloses transmitting **a radio resource signalling report** intended for use by the serving base station 1, but fails to disclose transmitting **radio measurement reports** intended for use by the serving base station 1. **A radio resource signalling report** is not the same as **a radio measurement report.**

Applicant further argues that Luijten fails to disclose "transmitting a radio resource signalling report intended for use by the service node in the network infrastructure to allocate a radio resource to the mobile station" as claimed. The examiner, however, disagrees. Applicant's attention is directed to Luijten, page 20 lines 4-20 which discloses that after the service node 4 receives a signalling report from a mobile station 2, it informs the base station 1 of the handover procedure performed (so that the base station 1 can disconnect its link with the mobile station 2). Since it is clear that allocating of a new channel to the mobile station 2 cannot be completed until the link between the mobile station and the base station 1 is disconnected, the service node 4 also participates in the operation of allocating a channel to the mobile station. In addition, *the claim fails to further define how the service node allocates a channel when it receives the signalling report from the mobile station.* Therefore, the examiner contends that Luijten does disclose "transmitting a radio resource signalling report intended for use by the service node in the network infrastructure to allocate a radio resource to the mobile station" with the broadest reasonable interpretation.

Regarding claims 22-29, 32, they are discussed for the same reasons as set forth above with respect to claim 21.

For the foregoing reasons, the examiner contends that the rejections to claims 21-44 are proper.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T Vo whose telephone number is (703) 308-6728. The examiner can normally be reached on Monday-Friday and alternate Monday from 8:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (703)305-4385. The fax phone numbers

for the organization where this application or proceeding is assigned are (703) 872-9314 for all communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Nguyen Vo

August 15, 2003

NGUYEN T. VO
PRIMARY EXAMINER